

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-7. (canceled)

8. (withdrawn) A receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence.

9. (withdrawn) The protein according to claim 8 comprising the sequence of amino acids shown in Seq. ID No: 2.

10. (withdrawn) The protein according to claim 8 comprising a sequence of amino acids wherein one or more of amino acids are deleted, substituted or added in the sequence of amino acids shown in Seq. ID No: 2.

11. (withdrawn) The protein according to claim 8 comprising the sequence of amino acids shown in Seq. ID No: 4.

12. (withdrawn) The protein according to claim 8 comprising a sequence of amino acids wherein one or more of amino acids are deleted, substituted or added in the sequence of amino acids shown in Seq. ID No: 4.

13. (withdrawn) A fusion protein comprising the protein according to claim 8 fused with a marker protein and/or a peptide tag.

14. (withdrawn) An antibody specifically bound to the protein according to claim 8.

15. (withdrawn) The antibody according to claim 14 which is a monoclonal antibody.

16. (withdrawn) A host cell comprising an expression system expressing the protein according to claim 8.

17-20. (canceled)

21. (withdrawn) A method of preparing a cell expressing a protein having reactivity against bacterial DNA having an unmethylated CpG sequence characterized in that the DNA according to claim 1 is introduced into a cell wherein a gene function encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is destroyed on a chromosome.

22. (withdrawn) A cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the method of preparing a cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence according to claim 21.

23. (withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: in vitro culturing a cell expressing a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence in the presence of a target substance, and measuring/evaluating TLR9 activity.

24. (withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: administering a target substance to a non-human animal wherein a gene function encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is destroyed on a chromosome, and measuring/evaluating TLR9 activity of macrophages or spleen cells obtained from the non-human animal.

25. (withdrawn) A screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence comprising steps of: administering a target substance to a non-human animal wherein a gene encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence is excessively expressed, and measuring/evaluating TLR9 activity of macrophages or spleen cells obtained from the non-human animal.

26. (withdrawn) A screening method for an agonist or an antagonist of a protein having reactivity against bacterial DNA having the unmethylated CpG sequence according to claim 24 using a mouse as a non-human animal.

27. (withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 23.

28. (withdrawn) A pharmaceutical composition comprising whole or part of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence as an active component.

29. (withdrawn) A pharmaceutical composition comprising the agonist or antagonist according to claim 27 as an active component.

30. (withdrawn) A kit used to diagnose a disease in a test DNA sample, which disease is related to the deletion, substitution and/or addition in a sequence of DNA encoding a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence, which kit comprises the DNA according to claim 3.

31. (canceled)

32. (withdrawn) A screening method for an agonist or an antagonist of a protein having reactivity against bacterial DNA having the unmethylated CpG sequence according to claim 25 using a mouse as a non-human animal.

33. (withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 24.

34. (withdrawn) An agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having an unmethylated CpG sequence obtained by the screening method for an agonist or an antagonist of a receptor protein specifically recognizing bacterial DNA having the unmethylated CpG sequence according to claim 25.

35. (previously presented) A transgenic mouse wherein the genome of the mouse comprises a homozygous inactivation of the Toll-like Receptor 9 (TLR9) allele such that no functional N-terminal fragment of TLR9 is produced, and wherein macrophages of said mouse exhibit decreased responsiveness to CpG ODN.

36-37. (canceled)

38. (previously presented) A cell obtained from the transgenic mouse according to claim 35.